Restoring Water Quality in Texas Surface Waters

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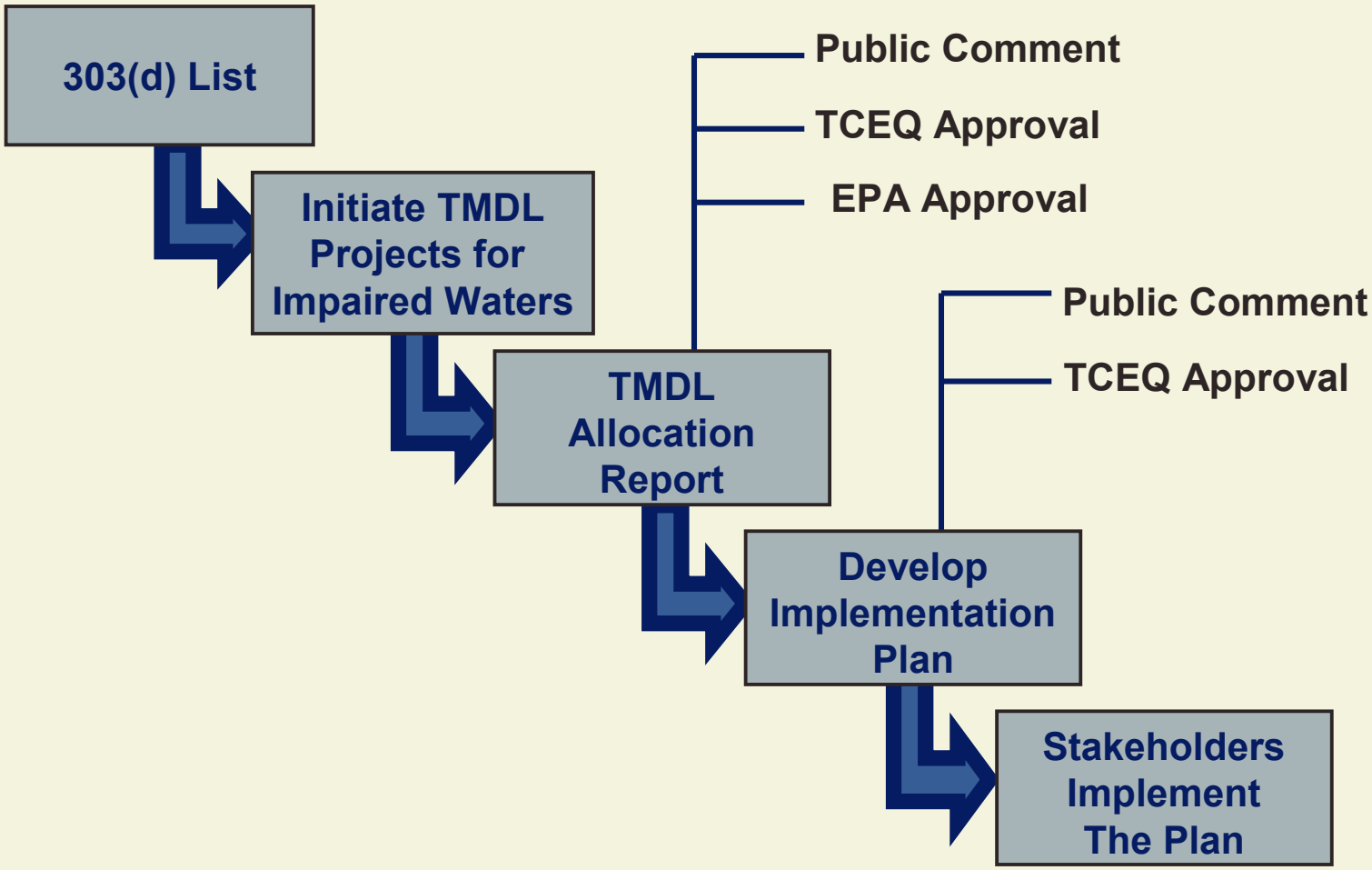
Total Maximum Daily Load Program

Texas Commission on Environmental Quality

TMDL Development Process

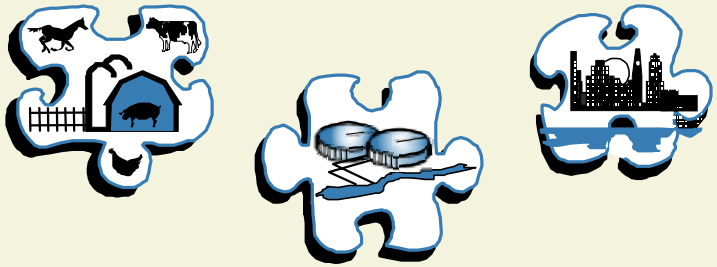


Texas TMDL Program

- Clean Water Act
  - list impaired waters
  - take action to restore
- Impaired
  - does not meet the criteria for support of its beneficial uses
  - *Texas Surface Water Quality Standards.*
- *Texas Water Quality Inventory and 303(d) List*
- Restoration
  - establish a total maximum daily load
  - develop an implementation plan.

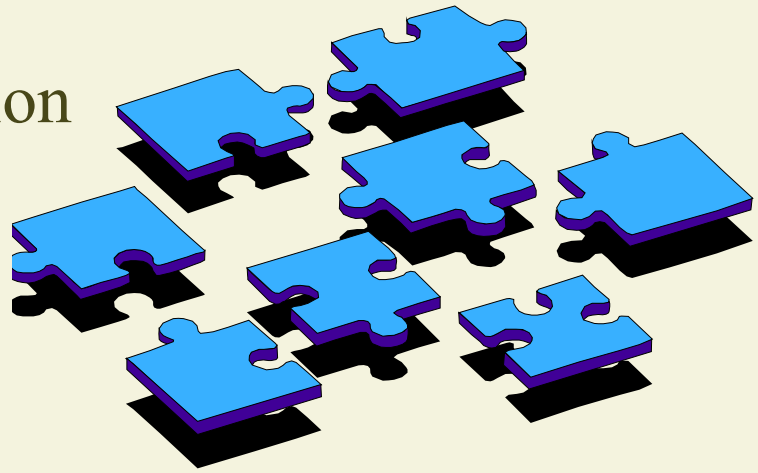
Key Elements of the Program

- **TMDL – Total Maximum Daily Load**
  Determines the maximum amount (load) of a pollutant that a water body can receive and still maintain the beneficial uses, and allocates this load to pollutant sources in the watershed.
- **Implementation Plan**
  A detailed description of the regulatory and voluntary management measures necessary to achieve the pollutant reductions identified in a TMDL.



Main Elements of a TMDL

- Problem Definition
- Endpoint Identification
- Source Analysis
- Linkage Between Sources and Receiving Waters
- Margin of Safety
- Pollutant Load Allocation (both point, nonpoint, and natural)



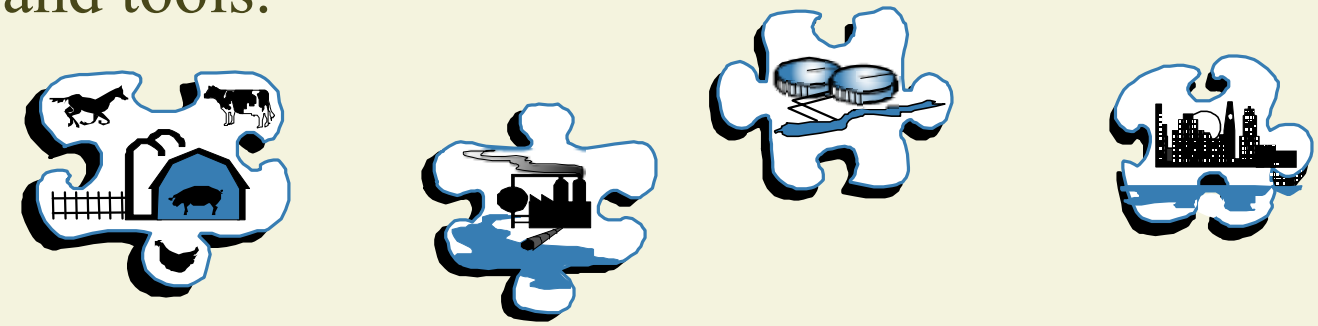
Two Kinds of Restoration Plans

- TMDL Implementation Plans (IPs)
- Watershed Restoration Plans (WRPs)
- Both have the same goal — improving water quality in rivers, lakes, or bays.

- IPs are remedial actions for impaired waters; WRPs may be either remedial or preventive.
- IPs are based on total maximum daily loads; WRPs use other measurable goals for water quality.

What Are WRPs and IPs?

- Watershed restoration plans and TMDL IPs:
  - Define actions needed to reduce pollution and restore water quality
  - Include both regulatory and voluntary actions
  - Are developed in cooperation with regional and local stakeholders
- Are based on the best available scientific methods and tools.



Implementing TMDLs

- Implementation plans (IPs) are collaborative and involve a wide variety of stakeholders.
  - Citizens, watershed interest groups
  - State, local, and federal agencies
  - Regulated organizations
- *Control actions* for point source discharges; *management measures* for nonpoint source discharges
- Often, plans are phased in based on progress in achieving water quality improvement.
- Water quality improvement may take years.
- Follow-up monitoring is crucial.

Control Actions

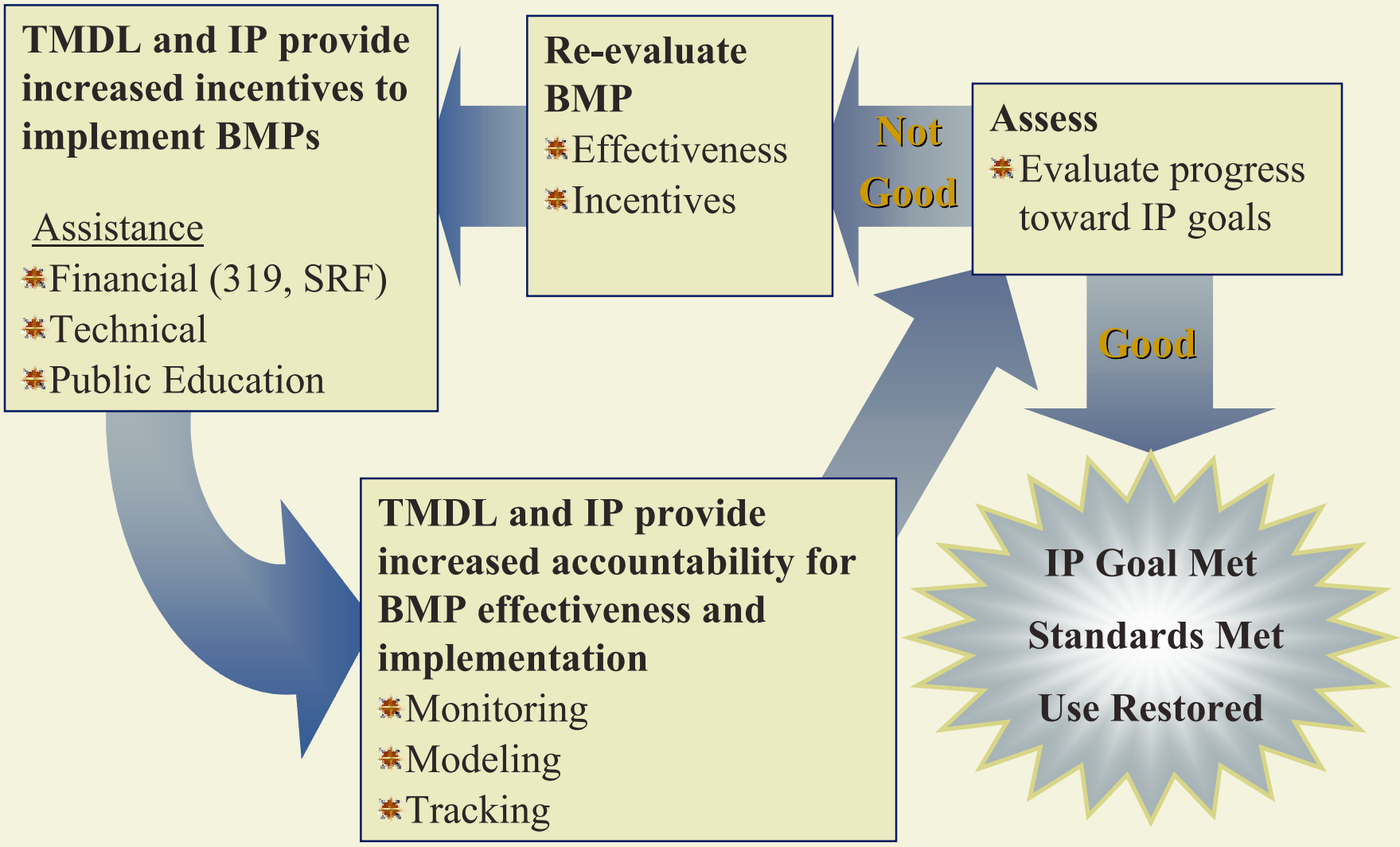
- Point source TMDL allocations affect permits:
  - New, amended, or renewed permitted loads must be consistent with the TMDL.
  - Permitted loading from existing facilities may be reduced.
  - New facilities may be required to meet more stringent effluent limits.
  - Storm water permits may receive new or more stringent limits.
  - Permittees may no longer be eligible for general permits.
  - Additional monitoring and reporting requirements may be needed.
  - Permittees may have the opportunity to negotiate effluent trading agreements to meet net load limit for watershed.

Management Measures

- Nonpoint source TMDL allocations may result in implementation of best management practices (BMPs):
  - Management of runoff
    - Detention basins, filter strips, infiltration basins, porous pavement, retention ponds, swales

  - Management of operations to decrease or eliminate pollutants in runoff
    - Spill prevention and control, source controls, education
- Managing nonpoint sources is an iterative process.

Management Measures



Benefits

Holistic Problem Assessment and Solution Development